Declaration of Edward A. Thomas

Pursuant to 28 U.S.C. § 1746, I, Edward A. Thomas, declare the following based upon my personal knowledge:

1. My name is Edward A. Thomas. I am 72 years old and competent to testify to all facts contained in this declaration. I submit this declaration in support of Conservation Law Foundation ("CLF")'s Comment on the United States Environmental Protection Agency ("EPA")'s Proposed 2020 Multisector General Permit (MSGP), Docket ID # EPA-HQ-OW-2019-0372.
2. I have over fifty years of experience working in the fields of public policy, law, and flood risk management, especially related to the constitutional and legal aspects of regulations designed to achieve disaster risk reduction. My career began with 35 years of federal service for the Department of Housing and Urban Development (HUD) and Federal Emergency Management Agency (FEMA). In these roles I worked closely with individuals, companies, and non-profit organizations recovering from and preparing for disasters. I began supporting local communities developing safe and affordable housing, and later focused on crafting and implementing results-oriented floodplain management and hazard mitigation policy. I worked closely with disaster survivors on approximately two hundred declared disasters and emergencies, serving dozens of times as the Federal Coordinating Officer, the President's designated representative. After retiring from federal service, I worked for a major engineering firm actively engaged as a FEMA FIRM contractor and have dedicated significant time to not-for-profit service. I have recently worked with many dedicated volunteers on two major projects: a) completion and publication of the American Bar Association (ABA)'s Resilience Handbook; and b) further refinement and promulgation the Natural Hazard Mitigation Association (NHMA)'s Disaster Risk Reduction (DRR) *curriculum.* The ABA Resilience Handbook will become an important addition to the

DRR *curriculum*.

3. I received a J.D. in Law, *Magna cum Laude*, in 1986 from the New England School of Law. I received a B.A. in History in 1969 from Fordham University. I am a Licensed Attorney in Massachusetts and manage a private practice of Law, Edward A. Thomas Esq., LLC. I am a widely published author, frequent lecturer, and President *Emeritus* of NHMA. I am an elected Fellow of the ABA Foundation, as well as an active member of the ABA Disaster Response and Preparedness Committee and Chair of the ABA State and Local Government Law Section's Resilience Task Force.
4. Early in my career, as Multi-family Housing Representative for HUD, I coordinated HUD Housing Programs throughout New England. I worked independently with community officials, bankers, developers, citizens, architects, and the media to promote housing programs. I was responsible for housing site selection, environmental review, and resolution of conflicts that prevented or delayed construction. Also, I was responsible for management and budget allocation as part of the College Housing Program in Massachusetts and Rhode Island. My area of work produced more HUD sponsored housing in three years than in the previous forty years and the following six years combined. The housing produced was recognized locally and regionally for excellence of design and concept. I served as permanent member of the HUD Disaster Cadre, working on disaster assignments following floods and a fire. I was appointed principal coordinator for HUD Area Office activities following the Chelsea Fire (MA). I managed the budgeting and development activities of college housing valued in excess of $300 million. I established the basic application processing system used by the Boston Area Office and recommended for use throughout the country by HUD Central Office. My work resulted in my a receiving letter of commendation for disaster work and other official duties.

5. As Senior Flood Insurance Specialist for HUD, I held full regional responsibility for promoting community participation in the National Flood Insurance Program, solving regional problems, and supervising a gradually increasing staff of professional engineers, planners, and program representatives. I addressed more than three hundred meetings with community officials, bankers, and real estate professionals. I established the New England Office of the Flood Insurance Program and assembled an outstanding staff composed of more than 40% women and minorities.
6. As Regional Director of Federal Insurance Administration for HUD, I provided independent staff supervision and regional management of the National Flood Insurance Program under the general direction of the Federal Insurance Administrator in Washington. I developed annual budgets and operating plans and served as principal planner reviewing local insurance and flood plain management ordinances. I addressed over five hundred groups on subjects of flood insurance and flood plain management during this period. I fostered positive relationships with federal, state, and local agencies, the media, and congressional offices, despite the sometimes-unpopular nature of the flood insurance program. I served as chairman of the FIA Task Force on the Central Office/Field Office Relationship and developed an extremely diverse and capable team.
7. As Chief, Natural and Technological Hazards Division of FEMA Region I, I managed emergency preparedness programs to help state and local governments to prepare for floods, earthquakes, nuclear power accidents, and dam failures. I was responsible for testifying before congressional committees and serving as an expert witness in administrative hearings and other legal proceedings concerning the National Flood Insurance Program and the Radiological Emergency Preparedness Program. I was responsible for preparation of complex and

challenging reports and monitoring action taken to follow up on these reports. I was appointed chairman of the Regional Assistance Committee and served as agency representative on numerous other committees. I served more than a year as FEMA's Principal Witness at the controversial Seabrook Nuclear Power Plant Licensing hearing. As one of the original members of the FIA Community Rating Task Force, I assisted in developing the Community Rating System (CRS) Program, which is recognized as one of FEMA's most important initiatives. I developed a system of FEMA comments on Federal Agency EO 11988 reviews which has led to proper hazard mitigation involving several billions of construction dollars.

8. As Director, Operations Support Division for FEMA Region I, I managed financial, logistical, computer, radio, and administrative support for day-to-day operations and disasters throughout New England. I developed unique cost-saving partnerships with other FEMA elements used as a national model. I developed an efficient, diverse, and effective team of professionals. I continued to serve as an active Federal Coordinating Officer and in leadership position on FEMA's National Emergency Response Team (White Team).
9. As Chief of the Disaster Assistance Programs Division for FEMA Region I, I managed disaster recovery programs which help cities, states, and local governments, and eligible private non-profit agencies to recover from the consequences of disasters. My responsibilities included tracking budgets which aggregated in excess of several $100 million. I managed the processing of governor's requests for Presidential Disaster Declarations. I served as regional expert on the Robert T. Stafford Disaster Relief Act. I managed the highly successful Business Process Reengineering of the Multi-Billion Dollar FEMA Public Assistance Program (1997-1998). I served as FCO/DFCO or DRM for approximately one hundred disaster operations. I increased regional readiness by emphasizing staff training, developing nationally recognized Hazard

Mitigation initiatives, and innovative resource solutions. I directed the development of the published Region I Federal Response Plan. I managed the closing of FEMA's "Tent Cities" established in response to Hurricane Andrew. I supervised the development of numerous publications designed to help FEMA's partners perform better on disaster response, prevention, and recovery. I served in leadership positions on FEMA's National Response teams since the formation of such teams.

10. As Senior Policy Advisor and Special Assistant to the Regional Director of FEMA Region I, I managed congressional relations, policy development, and external relations with business, industry, and government. I served as Chief of Operations for the Department of Homeland Security (DHS) National Capital Emergency Response Team and managed the team of national experts who developed the plan for the response to a catastrophic disaster in the National Capital Region. I made numerous speeches and presentations to regional audiences on behalf of the Regional Director. I served as the Deputy Federal Coordinating Officer for several Presidentially Declared Emergencies.
11. I left federal service to join the private sector as Technical Manager for Michael Baker Jr., Inc., where I was responsible for managing the National Service Provider's efforts to assist the Federal Emergency Management Agency's efforts to re-engineer the Cooperating Technical Partners Program and increase partnerships with all levels of government and with other parties interested in the Flood Insurance Map Modernization program. I exceeded the Key Performance Indicators assigned to the Partnerships Group. I spoke throughout the nation, presenting the message of Flood Mapping, including its benefits and limitations. I helped the firm with internal training and the delivery of quality mapping services.
12. My next career stage involved guiding the establishment of the Natural Hazard Mitigation

Association (NHMA) to fill recognized gaps in capacity-building for public-private hazard mitigation planning and transformation partnership efforts aiding local communities. Once the NGO was established, I served as its first President and after several years retired from my private sector job to devote myself full time to lead its non-profit endeavors.

13. In addition, I serve on the Steering Committee of the Climigration Network. I am a member of the National Institute of Building Sciences, and the Association of State Wetland Managers. I also serve as the Senior Legal Liaison to the Association of State Floodplain Manager's No Adverse Impact Committee.

14. I have received many accolades for my contributions to floodplain management and hazard mitigation, including:

- 2006 Goddard-White Award -- Association of State Floodplain Managers (ASFPM): the Nation's highest award for Floodplain Management, for "Outstanding Leadership to Reduce Disaster Impacts through Mitigation, Education, and Partnerships"
- 2008 Gulf of Maine Visionary Award -- International Gulf of Maine: for efforts in helping develop the Massachusetts StormSmart Coasts Program
- 2013 declared to be a "National Treasure" -- NHMA: for work with local government, business, and industry to build a safer more resilient society

I. EVALUATION OF THE PROPOSED 2020 MULTI-SECTOR GENERAL PERMIT

15. I am familiar with the EPA's 2020 Proposed Multisector General Permit for Industrial Stormwater Discharges. In particular, I have reviewed Section 2.1.1.8 and Request for Comment # 8.

16. As explained fully below, the MSGP appropriately maintains language from prior permits requiring rigorous and appropriate design and operations for subject facilities. These provisions

include for example: disclosure of information relevant to design, operation, and maintenance of facilities in the possession of regulated entities (as well as hired professional consultants such as engineers); identification of potential spill and discharge locations associated with flooding, run-on events such as storm surge and wave action, as well as surface runoff or flows that exceed the capacity of existing drainage infrastructure; engineer's and operator's certifications; design, operation and maintenance based on duties of care such as "good engineering practice," and annual update of SWPPPs based on available data. All of these provisions have long served as the regulatory foundation of the regulatory structure of the MSGP and, given the high level of scientific consensus and available data and modeling, have required and continue to require full consideration of relevant flood information, including knowledge of its proper use and limitations.

17. Since the proposed language for 2.1.1.8 does not directly remove or alter the requirements throughout the MSGP that facilities use "good engineering practices" in designing the facilities and preparing for severe weather events, its narrow and inadequate focus would constitute prohibited "back-sliding" if adopted in the final permit because it would narrowly constrain existing permit language requiring consideration of the known limitations of Base Flood Elevation (BFE) information as shown on Flood Insurance Rate Map (FIRM) documents developed by FEMA and its engineering contractors. Due to the high levels of uncertainty embodied in FEMA FIRM data and mapping related to current conditions, as well as the lack of any consideration of known climate change effects on future BFE status, the proposed section 2.1.1.8 would need to be significantly strengthened or revert to the 2015 MSGP language to conform to the regulatory standard required through the longstanding structure of the previously issued MSGP.

A. Current MSGP Regulatory Standard

18. In my experience, I am familiar with reviewing and applying regulatory language such as that in the 2015 MSGP and the Proposed 2020 MSGP. In my opinion based on extensive professional work in this domain, plus familiarity with other standards and practices by others, the 2015 MSGP adopts a "good engineering practices" standard that requires permittees to anticipate reasonably foreseeable risks, including climate uncertainty risks, and to design and construct their facilities to protect the facilities from these reasonably anticipated risks.

19. The 2015 MSGP sets a "good engineering practices" standard for both control measures and creation of the Stormwater Pollution Prevention Plan ("SWPPP").

20. The Proposed MSGP has identical provisions to the 2015 MSGP adopting the "good engineering practices" standard, which it must, to avoid impermissible backsliding, per proposed MSGP §§ 2.1, 6.1.

II. PROPOSED PERMIT DEFICIENCIES

A. The permit conditions and standards included in Section 2.1.1.8 of the proposed 2020 MSGP are less stringent and therefore unlawful under the Clean Water Act's anti-backsliding requirements. See 33 U.S.C. § 1342(o).

21. The Clean Water Act ("CWA") anti-backsliding[1] provision prohibits permits from having less stringent effluent limitations than the previous permit. *See* 33 U.S.C. § 1342(o). Section 402(o)(3) of the CWA is a safety clause that provides an absolute limitation on backsliding:

> This section of the CWA prohibits the relaxation of effluent limitations in all cases if the revised effluent limitation would result in a violation of applicable effluent guidelines or water quality standards, including antidegradation requirements. Thus, even if one or more of the backsliding exceptions outlined in the statute is applicable and met, CWA section 402(o)(3) acts as a floor and restricts the extent to which

[1] Anti-backsliding "refers to statutory and regulatory provisions that prohibit the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards less stringent than those established in the previous permit." U.S. Envtl. Prot. Agency, *NPDES Permit Writers' Manual*, at 7-2 (Sept. 2010), https://www3.epa.gov/npdes/pubs/pwm_chapt_07.pdf.

> effluent limitations may be relaxed. The requirement affirms existing provisions of the CWA that require effluent limitations, standards, and conditions to ensure compliance with applicable technology and water quality standards.

U.S. Envtl. Prot. Agency, *NPDES Permit Writers' Manual*, at 7-4 (Sept. 2010), https://www3.epa.gov/npdes/pubs/pwm_chapt_07.pdf.

22. In my experience, I am familiar with reviewing and applying regulatory language such as that in the 2015 MSGP and the Proposed 2020 MSGP. In my opinion based on extensive professional work in this domain, plus familiarity with other standards and practices by others, the 2020 MSGP adopts standards that are weaker than the 2015 MSGP.

23. In an effort ostensibly intended to "clarify" some of the MSGP requirements, the language proposed by EPA in section 2.1.1.8 violates Section 402(o) by narrowing the scope of the control measures by basing a facility's risk designation on FEMA flood risk assessments. As discussed above, the 2015 MSGP requires consideration of all available information and requires a prospective risk assessment based on best engineering standards. The use of the Base Flood Elevation (BFE) indicated on a FEMA Flood Insurance Rate Map (FIRM) without further site specific based engineering and research is not adequate for most engineering design and construction purposes, and especially not in cases understood to involve risk to human life and health as well as damage to clean water. Many professional journals and local news reports clearly indicate a growing awareness of the limitations of FEMA's Base Flood Calculations. *See*, e.g., Adams-Schoen, Sarah J. & Thomas, Edward A., *A Three-Legged Stool on Two Legs: Federal Law Related to Local Climate Resilience Planning and Zoning*, 47 URB. LAW 3 (Sum. 2015), *available at* http://nhma.info/wp-content/uploads/2016/02/UL-47-3_08Adams-Schoen-Thomas.pdf; Gramling, Carolyn, *and Federal maps underestimate flood risk for tens of millions of people, scientists warn*" (Dec. 13, 2017), *available at*

https://www.sciencenews.org/article/federal-maps-underestimate-flood-risk-tens-millions-people-scientists-warn.

24. The BFE associated with the 1% annual risk of flooding is designed to have an engineering confidence level of about 50-50; as opposed to the standard engineering practice of having typical calculations target a 95% chance of correctness (thus a 5 % chance of being in error). For critical calculations such as, say, design of bridges, nuclear plants, or facilities that handle contaminants, the confidence level is expected to be far higher. Thus, what exists is confidence (in the engineering sense) that the BFE has a roughly 50% chance of being too low, making it entirely unsuitable as a basis for critical decisions or calculations. Based on recorded damages, these FEMA maps have proven that they are less than 50% accurate in predicting actual areas of flooding. While the FIRM BFE can offer valuable guidance for initial project planning or review, it has long been recognized (and was never intended or structured to be otherwise) as a wholly inadequate resource for detailed critical engineering purposes. The permit conditions and standards in the 2020 MSGP are less stringent than those in the 2015 Permit and therefore adoption of the language proposed in section 2.1.1.8 of the 2020 MSGP is in violation of Section 402(o) of the CWA.

B. The use of FEMA FIRMs as a basis for benchmarking control measures and identifying at-risk facilities is inadequate and a less stringent requirement than the 2015 MSGP.

1. BFE is a narrowly applicable flood insurance rate-setting metric inappropriate for use as a tool to define engineering standards; particularly in a situation where the selected height for flood protection is critically important due to severe consequences of flood caused releases and damage.

25. As noted in *Request for Comment 8* and page 16 footnote 5, BFE "is the computed elevation to which floodwater is anticipated to rise during the base flood," which is what FEMA has determined to be the 100-year flood, or the flood with a one percent annual chance of being

equaled or exceeded in a given year. Areas that will be inundated in the event of a 100-year storm are designated Special Flood Hazard Areas (SFHA) on FEMA FIRMs. However, FEMA created these maps not as a tool for designing facilities and infrastructure to prevent discharge of pollutants by withstanding storms and floods in such areas, but for the purpose of providing federal government subsidized insurance to homeowners with federally insured mortgages and for providing guidance to designers as to minimum levels above predicted floods to design structures. Moreover, the FEMA FIRMs are based on scales of large-area topographic surveys which are prone to inaccuracies given the scale and source of survey information (e.g., aerial photo analysis for contour lines vs on-site laser surveys verified in person and tied to multiple established benchmarks). The flood analysis has typically relied on limited historic data, not forecasts of future rainfall, sea level, or even land development conditions which are understood to exacerbate flood risk in many cases. Due to budget constraints as well as slow and methodical processes for updating program goals, procedures, and methods, many FIRMs are decades old and do not reflect major changes (such as intensive development, modifications to dams and other control structures, recent storm damage to natural and built topography, etc.) well known to affect the threats, vulnerabilities, and consequences tied to flood risk.

2. The specific references to BFE and SFHA in the 2020 MSGP constitute unlawful backsliding.

26. The 2020 MSGP references "BFE" in two instances. Section 2.1.1.8(b) and (d) suggest using BFE as a height by which to raise or store structures and materials to supposedly protect them from flooding. However, as discussed immediately *supra*, using BFE as a proxy for "safe height" is risky and unsound as an engineering practice.

27. Even if a specific BFE were known to be a reasonably accurate indication of current flood risk (for instance where a FIRM was recently updated or otherwise underwent a detailed review with

additional analysis), good engineering practice calls for developing appropriate levels of data and analysis that are fit for purposes in the context of a particular facility design. In recent years, it has become increasingly common for states and municipalities to refer in local codes and ordinances to some level of freeboard, "a term used by FEMA's National Flood Insurance Program (NFIP) to describe a factor of safety usually expressed in feet above the 1-percent-annual chance flood level." FEMA Factsheet, *Building Higher in Flood Zones: Freeboard – Reduce Your Risk, Reduce Your Premium*, *available at* https://www.fema.gov/media-library-data/1438356606317-d1d037d75640588f45e2168eb9a190ce/FPM_1-pager_Freeboard_Final_06-19-14.pdf.

28. BFE on its own, aside from being unreliable and inadequate for the purpose of site-specific engineering, provides no margin of error for common flooding occurrences such as wave action, mobilized debris, and more.

29. This weakening of the permit by explicitly incorporating BFE is particularly concerning because of the types of facilities subject to the MSGP and the immense potential for devastating results should a facility flood.

30. Request for Comment 8 suggests further weakening the MSGP by inappropriately using the SFHA to attempt to characterize risk levels across multiple sectors, including many which carry high consequences to human health and safety and the environment.

31. As discussed above, FEMA FIRMs were created primarily as an insurance premium pricing tool and were created based on often incomplete historic data that does not consider recent or future climate change impacts, or other topographic and infrastructure modifications which may increase flood risk.

32. As a result, using the FIRMs as a tool to identify risk will miss large swaths of facilities that are

currently at high risk of flooding, and ignores that certain facilities may have specific characteristics that make them more susceptible to flooding in addition to their location, namely through erosion, failure by improperly designed and/or maintained dams and levees, backwater effects, debris jams affecting bridges or pipes, etc.

3. The proposed use of the one percent flood level or BFE as calculated by FEMA also ignores Executive Order 11988 (EO 11988) which requires floodproofing and planning to at least the .2 percent or 500-year flood level.

33. The regulations as currently drafted ignore the analysis required by Executive Order 11988 (EO 11988) by referring to BFE which has a 1% annual risk of flooding when EO 11988 calls for lower annual risk as well as engineered resilience features.

34. Under the terms of EO 11988 all federal actions which may be located in a floodplain must be analyzed to determine potential flood risk. As clearly indicated in the implementing guidance concerning EO 11988:

> A. When does Executive Order 11988 Apply?
>
> The Executive Order is applicable to all Federal actions. The WRC Floodplain Management Guidelines define action for the purposes of the Executive Order. Action is any 'Federal activity including ('-.) acquiring, managing, and disposing of Federal lands and facilities; (2) providing federally undertaken, financed or assisted construction and improvements; **and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land use resources planning, regulating, and licensing activities.**
>
> All proposed Federal actions, therefore, should be reviewed at the earliest possible stage to determine if they are in a floodplain. Any actions located in or impacting the base floodplain 100-year (500-year for critical actions) initiates part or all of the remaining Executive Order process. Part II, Decision Making Process, of the WRC Guidelines describes the eight-step decision making process that must be followed for actions in or impacting the base floodplain (500-year for critical actions). While the Executive Order is applicable to those Federal actions which will occur in or which will impact upon floodprone areas the extent of its applicability may vary due to other considerations. Factors such as actions of limited impact, actions taken to reduce flooding, or those of a temporary nature may necessitate an altered or shortened decision-making process.

Further Advice on Executive Order 11988 Floodplain Management, 8, FEMA, *available at* https://www.gsa.gov/cdnstatic/Advice_EO11988.pdf (emphasis added).

35. The draft permit language proposes use of the one percent flood level or BFE as calculated by FEMA and ignore Executive Order 11988 which, among many other things, clearly requires floodproofing and planning to at least the .2 percent or 500-year flood level for many types of facilities falling under MSGP review.

36. In August 2017 President Trump issued Executive Order 13807 which rescinded Executive Order 13690, Federal Flood Risk Management Standard; however, EO 11988 was not rescinded. As noted in the Federal Register: "Executive Order 13807 left in place Executive Order 11988, which provides for uniform floodplain management standards and procedures across the Executive Branch, and which is currently reflected in FEMA regulations. See 44 CFR part 9." *Updates to Floodplain Management and Protection of Wetlands Regulations To Implement Executive Order 13690 and the Federal Flood Risk Management Standard*, 83 Fed. Reg. 9473-01, *available at* https://www.federalregister.gov/documents/2018/03/06/2018-04495/updates-to-floodplain-management-and-protection-of-wetlands-regulations-to-implement-executive-order.

I swear, under penalty of perjury, that the foregoing is true and correct to the best of my knowledge.

Edward A. Thomas, Esq.

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Executed on 1 June 2020